

ABSTRACT OF THE DISCLOSURE

Immediately after stacking of a barrier layer formed of GaAsP of a multiple-strain quantum well active layer 105 at a growth temperature of 650°C, a second upper
5 guide layer 126 formed of AlGaAs is stacked. This second upper guide layer 126 is grown while the temperature is kept at 650°C, which is a growth temperature suitable for P-based layers. By reducing the desorption of P from the barrier layer, the roughness level of the interface between
10 the barrier layer and the second upper guide layer 126 is lowered to 20Å or less. Thereafter, a first upper guide layer 106 is stacked. Growth temperature of this first upper guide layer 106, which is 650°C at a start of the growth, is started to be increased concurrently with the
15 growth, and gradually elevated until an end of the growth so as to reach 750°C at the end of the growth.